

REMARKS

The Office Action dated August 27, 2002, has been received and carefully noted. The following remarks are submitted as a full and complete response thereto.

Claims 1-19 are pending in the application. By this Amendment, Applicants have amended claim 1 to more particularly point out and distinctly claim the present invention. No new matter has been added. In view of the following remarks, reconsideration and allowance of these claims are respectfully requested.

CLAIM REJECTIONS UNDER 35 U.S.C. § 112

On page 2, paragraph 2 of the Office Action, claims 7, 8 and 19 were rejected under 35 USC § 112, first paragraph, as allegedly containing subject matter which was not described in the specification in such a way as to enable one skilled in the relevant art to make and/or use the invention. The Office Action alleges that the specification fails to disclose how a parameter representing the service situation

Applicants respectfully submit that it is not necessary that the specification include concepts that are well known in the art. Section 2164.05(a) of the M.P.E.P. states, “[t]he specification need not disclose what is well known to those skilled in the art and preferably omits that which is well known to those skilled and already available to the public.” (*Emphasis added.*) In re Buchner, 929 F.2d 660, 661, 18 USPQ2d 1331, 1332 (Fed. Cir. 1991); Hybritech, Inc. v. Monoclonal Antibodies, Inc., 802 F.2d 1367, 1384, 231 USPQ 81, 94 (Fed. Cir. 1986), cert. Denied, 480 U.S. 947 (1987); and Lindemann

Maschinenfabrik GMBH v. American Hoist & Derrick Co., 730 F.2D 1452, 1463, 221 USPQ 481, 489 (Fed. Cir. 1984).

The specification provides several examples of transmitting the parameters according to several methods that are well known in the art. For instance, on page 5, line 35 – page 6, line 12, the specification of the present application specifically discusses that the parameters can be sent to the terminal equipment on either a broadcast control channel or a multicast transmission, such as a Point-to-Multipoint transmission. The specification further explains that suitable channels for transmitting the parameters in the GPRS system are BCCH or PBCCH. As support that these techniques are well known, Applicants submit a technical reference that describes, for example, how data is transmitted according to BCCH and a point-to-multipoint signaling. The reference is titled “The Communications Handbook.” Applicant has provided a copy of pages 539 and 1227-1228 of this text for the Examiner’s review. Page 539 provides a discussion explaining how a message is transmitted using point-to-multipoint signaling, and pages 1227-1228 provide a discussion explaining how a GSM public land mobile network operates when broadcasting a signal along a BCCH. Thus, Applicants respectfully submit that it is well known in the art how to transmit data according to the teachings provided by the examples listed in the specification and any other foreseeable embodiments. Therefore, one skilled in the art would know how to make and/use the claimed invention. Applicants respectfully submit that, in order for the description of an

invention to be enabling, it is not necessary to provide a detailed description within the specification of concepts that are well known in the art.

Furthermore, Applicants submit that, since the specification provides examples describing how to transmit the parameters, the method of transmitting the parameters according to these examples and any other foreseeable embodiment are inherently disclosed in the specification. Section 2163.07(a) of the M.P.E.P. states, "by disclosing in a patent application a device that inherently performs a function or has a property, operates according to a theory or has an advantage, even though it says nothing explicit concerning it. The application may later be amended to recite the function, theory or advantage without introducing prohibited new matter." In re Reynolds, 443 F.2d 384, 170 USPQ 94 (CCPA 1971); In re Smythe, 480 F. 2d 1376, 178 USPQ 279 (CCPA 1973).

In view of these comments and the scientific reference provided, withdrawal of the above rejection is therefore respectfully requested.

CLAIM REJECTIONS UNDER 35 USC § 103

Claims 1-3, 9-11, 13-15 and 19 were rejected under 35 U.S.C. 103 as being unpatentable over "Mobile Multimedia: In Context to ATM Transports and GSM/GPRS Mobile Access Networks" by S.S. Chakraborty. The Office Action alleged that Chakraborty discloses all of the elements of the claimed invention, with the exception of supplying the parameter to the use of terminal equipment. The Office Action further alleges that this feature would have been obvious to one skilled in the art prior to

Applicants' invention in light of the teachings of Chakraborty. Applicants submit that the prior art cited in the Office Action fails to teach, suggest or disclose the features of the claimed invention. Therefore, reconsideration is respectfully requested for the reasons which follow.

Claim 1, upon which claims 2-19 are dependent, recites a method for indicating the prevailing overall service situation in a packet radio network which includes at least one base station (BTS) and at least one terminal equipment (MS, PC) and where several classes for the quality of service have been determined. The method includes a step of determining at least one parameter representing the overall service situation of the packet radio network. The method also includes a step of supplying this parameter to the use of the terminal equipment (MS, PC).

A method and system for determining a service situation in a packet radio network is provided as a result of the claimed invention. The claimed invention is directed to transmitting the overall service situation to a user and/or the applications programs so that the application can automatically adapt to changes in the service situation. Based upon the overall service situation, the claimed invention is able to determine whether the quality of service (QoS) that a terminal equipment is currently receiving can be improved by entering into negotiations with a base station to either lower or increase its current level of QoS. These advantages are not all-inclusive but are merely exemplars of some of the benefits of the invention.

Applicants submit that the prior art fails to disclose or suggest the elements of the invention as set forth in claims 1-17, and thereby fails to provide the critical and nonobvious advantages that are provided by the invention. To establish a prima facie case of obviousness, the prior art reference (or references when combined) must teach or suggest all of the claimed limitations. There must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. The teaching or suggestion to make the claimed combination must be found in the prior art, and not be based on Applicants' disclosure. See M.P.E.P. §§ 2143.01 and 2143.03.

Chakraborty discloses a scenario where an ATM backbone network is provided with a mobile access network such as a GSM/GPRS. Chakraborty discusses in general terms concepts of implementing an ATM backbone network with a mobile access network. Chakraborty identifies one problem with its proposal is the integration of the ATM and the mobile networks because the ATM is a prime backbone network for a multitude of services. (Chakraborty, pages 1938-1939). Chakraborty states that disparities exists between the two types of networks because, "A mobile network is inherently a lower QoS network, compared to a wireline network. " To address this problem, Chakraborty teaches that, during a session between a mobile and fixed terminal, the "negotiated QoS" will be governed by the lower values in most cases. Namely, the whole session will be toned down to the lower QoS parameters. In other cases such as multicasting, Chakraborty teaches that the system should get rid of adhering to a

multitude of QoS specifications. (Chakraborty, pg. 1939, "D. Service Scalability and Buffering").

However, it is Applicants' position that there Chakraborty does not render the claimed invention obvious because Chakraborty actually teaches away from the present invention. The claimed invention is directed to transmitting the overall service situation to a terminal equipment and/or its applications programs so that the application can automatically adapt to changes in the service situation. The invention transmits information on the overall service situation of the classes for the QoS that is available to the terminal equipment. Based upon the overall service situation, the claimed invention enables the terminal equipment to determine whether negotiation of the QoS would actually improve the terminal equipment's current transmission. Based upon the overall service situation, the terminal equipment can determine whether to lower or increase its current QoS level. The overall service situation also allows the terminal equipment to determine, based upon the current demand on the base station, whether adjusting the current QoS will improve the current transmission at all. If not, then the invention allows the terminal equipment to connect to a neighbor base station to determine whether a neighboring base station would provide a better QoS.

Rather, Chakraborty teaches that the negotiated QoS parameters should be handled in one of two modes. Neither of the modes in Chakraborty allows the terminal equipment to actually negotiate its level of QoS. In Chakraborty, the QoS will automatically be governed by the lower QoS or down graded to either a lossy or lossless types of services.

(Chakraborty, pg. 1939, "D. Service Scalability and Buffering"). Although Chakraborty mentions the phrase "negotiated QoS", no negotiation is actually permitted in Chakraborty because the terminal equipment (i.e., mobile user) is set by the network to operate at either one of the two modes. If the terminal equipment of Chakraborty does not operate in one of these two modes, there is no opportunity for the terminal equipment to negotiate with a base station.

Another reason that Chakraborty does not render the claimed invention obvious is because Chakraborty fails to teach or disclose the concept of an overall service situation, wherein the overall service situation determines each QoS class. In the claimed invention, at least one parameter is determined to represent the service situation of the packet radio network. The at least one parameter is supplied to the terminal equipment so that the terminal equipment can determine the negotiation strategy to employ within the network. Chakraborty merely mentions the QoS parameters and lists examples of services provided by the ATM but does not teach or suggest making a determination of an overall service situation of each class of service.

Furthermore, as admitted by the Office Action, another limitation missing from Chakraborty is the step of supplying the parameter representing the overall service situation to the use of the terminal equipment.

For at least these reasons, Applicants respectfully submit that claims 1-19 are patentable over Chakraborty.

Furthermore, claims 2-19 depend from claim 1 and are therefore allowable at least for the reasons claim 1 is allowable, respectively, and for the specific limitations recited therein.

Claims 1-3, 4-6, 9, 10-12, and 13-18 rejected under 35 U.S.C. 103 as being unpatentable over “Mobile Multimedia: In Context to ATM Transports and GSM/GPRS Mobile Access Networks” by S.S. Chakraborty in view of “Real-Time Scheduling with Quality of Service Constraints” by Hyman et al. The Office Action alleged that Chakraborty discloses various QoS. The Office Action then takes Official Notice that such determining factors as basis of utilization ratio, basis of time stamps, success probability of resources reservation attempts, waiting times of resources reservations are well known. The Office Action further alleged that it would have been obvious to a skilled artisan to apply the determining factors for QoS in a wireless in general. The Office Action also comments that Hyman discloses more examples of such constraints. Applicants submit that the prior art cited in the Office Action fails to teach, suggest or disclose the features of the claimed invention. Therefore, reconsideration is respectfully requested for the reasons which follow.

Hyman discloses real-time scheduling with quality of service constraints. Hyman discloses implementing class-based asynchronous time sharing (ATS) networks. Hyman discusses the concept of a schedulable region, which is the region in the space of possible loads for which scheduling algorithm guarantees QoS.

Applicants submit that neither Chakraborty nor Hyman, taken in combination or alone, discloses or suggest the claimed invention. First, Chakraborty teaches away from the present invention and also fails to disclose several limitations of the claimed invention as discussed above. Hyman does not cure the deficiencies of Chakraborty. Hyman is directed solely to scheduling data transmission in an asynchronous time sharing (ATS) network within an asynchronous transfer mode (ATM). An ATS network is based upon a protocol that implements a service according to the guaranteed quality of service offered, and an ATM is a network based only a packet or fixed cell switching technology. In comparison to the claimed invention, Hyman does not teach or suggest transmitting data in both a packet switching and a mobile network. In other words, Hyman does not teach or suggest a packet radio network that includes at least one base station as recited in the claimed invention.

Furthermore, Hyman discusses class-based scheduling, but Hyman, like Chakraborty, does not teach or suggest an overall service situation, wherein the overall service situation determines each QoS class and at least one parameter is determined to represent the service situation of the packet radio network. In the claimed invention, the at least one parameter is transmitted to a terminal equipment in order to permit the terminal equipment to negotiate its level of QoS. Hyman, on the other hand, discloses buffering and scheduling the transmission of the data packets based upon each classification. (Hyman, page 1053, "A. The Architecture of the Switching Node" and "B. The Quality of Service Constraints"). As discussed above, an ATS network is based

upon a protocol that implements a service according to the guaranteed QoS offered. The design of ATS-based networks relies on the hardware implementation of buffer management and scheduling algorithms in which the QoS guarantee is explicitly incorporated. In other words, Hyman only discloses buffering and scheduling the transmission of data packets based upon the QoS in a packet switching network.

Thus, the combination of Chakraborty in view of Hyman does not render the claimed invention obvious for the reasons discussed above.

Claims 1-3, 7-9, 13, 14 and 19 were rejected under 35 U.S.C. 103 as being unpatentable over Brigida (U.S. Patent No. 5,528,626). The Office Action alleged that Brigida discloses all of the elements of the claimed invention, with the exception of a reference to several classes of service for the quality of service. The Office Action alleges that it would have been obvious to provide more than one level of service in light of the specification of Brigida. Applicants submit that the prior art cited in the Office Action fails to teach, suggest or disclose the features of the claimed invention. Therefore, reconsideration is respectfully requested for the reasons which follow.

Brigida discloses a method and system for permitting selected command sequences to be processed by a modem during data transfer operations. Brigida discloses that digital data within a portable computer may be converted into a series of analog signals and transmitted, via a cellular telephone system and multiple intervening repeaters to a telephone system. (Brigida, col. 4, lines 13-26).

Brigida does not disclose or suggest the claimed invention because the claimed invention is directed to transmitting packets or cells of data in a packet radio network which includes at least one base station. The claimed invention relates to transmitting packets or cells over both a packet radio network and a mobile system. However, Brigida relates to converting digital data to analog data, which is then transmitted over a telephone system. A modem is used to convert the digital data from a computer to an analog signal. Brigida does not transmit packets or cells over an air interface such as a mobile network. Instead, Brigida merely discloses converting a digital signal into an analog signal and then transmitting the analog signal along a telephone communications system. Converting digital signals to analog systems in a telephone system is well known, as noted in col. 4, lines 21-25 of Brigida.

Brigida also fails to disclose or suggest an overall service situation and the step of determining at least one parameter representing the service situation of the packet radio network. The step of supplying the parameter to the use of a terminal equipment is neither disclosed nor suggested in Brigida. In other words, since Brigida neither teaches nor suggests any elements of the claimed invention, it is respectfully submitted that the rationale provided by the Office Action is based on improper hindsight.

DOUBLE PATENTING REJECTIONS

Claims 1-3, 9 and 13 were provisionally rejected under the judicially created doctrine of double patenting over claim 10 or 11 of copending U.S. Application

09/155201 (WO 97/36405). This reconsideration is respectfully requested for the reasons which follow.

In determining whether a nonstatutory basis exists for a double patenting rejection, the first question is—does any claim in the present application define an invention that is merely an obvious variation of the claims in the copending invention 09/155201 (WO 97/36405)? The criteria for answering this question are the same as for determining obviousness under 35 U.S.C. § 103. A double patenting rejection of the obvious-type is “analogous to a failure to meet the nonobviousness requirement of 35 U.S.C. 103”, except that the patent principally underlying the double rejection is not considered prior art. In re Braithwaite, 379 F.2d 594, 154 USPQ 29 (CCPA 1967). Therefore, any analysis employed in an obvious-type double patenting rejection parallels the guidelines for an analysis of a 35 U.S.C. 103 obviousness determination. In re Braat, 937 F.2d 589, 19 USPQ2d 1289 (Fed. Cir. 1991); In re Longi, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985). See, M.P.E.P. § 804, paragraph II.B.1.

Applicants submit that no claim in the present application defines an invention that is merely an obvious variant of the invention claimed in the copending application 09/155201 (WO 97/36405). In comparison, claims 1-3, 9 and 13 of the present invention and claims 10 and 11 of the copending application 09/155201 (WO 97/36405) are significantly different. Thus, they would not have been obvious to one skilled in the art at the time of the present invention for the reasons that follows:

The Examiner provided to the Applicants on the PTO-892 Form a copy of the WO 97/36405 application which the Examiner states correspond to copending application 09/155201.

According to WO 9736405, claim 10 recites:

“A method according to any one of claims 1 to 9, characterized in that the quality of service of the subscriber and/or application is signaled to the nodes located along the connection by providing each packet with an identity indicating the service/quality of service.

According to WO 9736405, claim 11 recites:

A method according to any one of claims 1 to 9, characterized in that the service/quality of service of the subscriber and/or application is signaled to the nodes to the nodes located along the connection by a separate message indicating a change in the service/quality of service.

Copending application 09/155201 (WO 9736405) relates to prioritization of the transmission of data by controlling the amount of data transmitted during a single transmission. The copending application 09/155201 (WO 9736405) may divide the transmissions according to queues based on a subscriber identity so that the amount of data sent during a single transmission can be defined on the basis of the subscriber's QoS. If the subscriber's QoS has a high priority, a larger amount of data is transmitted from a queue during a single transmission than from a queue having a lower priority. Further, the queues with the highest priority can be processed immediately, whereas the queues

with the other priorities are processed in turns. (Application No. 09/155201 (WO 9736405, page 6, lines 10-20)).

Specifically, claim 10 of the copending application 09/155201 (WO 9736405) relates to one embodiment where the subscriber can be identified on the basis of an identity sent, for example, in a header of a frame. The identity may identify each connection between the mobile station and the nodes. (Application, 09/155201 (WO 9736405, page 7, lines 8-15). When each packet is provided with an identity code indicating the QoS, each node along the connection can make a decision concerning the packet's priority independently.

Claim 11 of the copending application 09/155201 (WO 9736405) relates to another embodiment where the QoS can be signaled by a separate message indicating a change in QoS. The message can be sent to a router located somewhere along the connection. The router will then store the changed QoS in its memory.

In comparison to the copending application 09/155201 (WO 9736405), the present invention is directed to transmitting the overall service situation to a terminal equipment and/or its applications programs so that the application can automatically adapt to changes in the service situation. The invention transmits information on the overall service situation of the classes for the quality of service that is available to the terminal equipment. Based upon the overall service situation, the claimed invention enables the terminal equipment to determine whether negotiation of the QoS would improve the transmission that the terminal equipment is currently receiving. Based upon the overall

service situation, the user can determine whether to lower or increase its current QoS level. The overall situation also allows the user to determine that based upon the current demand on the base station whether adjusting the current QoS will improve the current transmission. If not, then the invention allows the user to determine whether a neighboring base station would provide a better QoS.

The claims of the present invention would not have been obvious to one of ordinary skill in the art at the time of Applicants' invention because several elements of claims 1-3, 9 and 13 of the present invention are not disclosed in the copending application 09/155201 (WO 9736405). Specifically, in comparison to claim 1 of the present invention, claims 10 and 11 of the copending application 09/155201 (WO 9736405) do not disclose or suggest a method for indicating the prevailing overall service situation in a packet radio network which includes at least one base station (BTS) and at least one terminal equipment (MS, PC) and where several classes for the quality of service have been determined. Another element missing from the copending application 09/155201 (WO 9736405) is the step of determining at least one parameter representing the overall service situation of the packet radio network. The copending application 09/155201 (WO 9736405) also fails to disclose or suggest the step of supplying this parameter to the use of the terminal equipment (MS, PC).

Furthermore, claims 2-19 depend from claim 1 and are therefore allowable at least for the reasons claim 1 is allowable, respectively, and for the specific limitations recited therein.

Thus, Applicants submit that no claim of the present invention is an obvious variant of the copending application 09/155201 (WO 9736405).

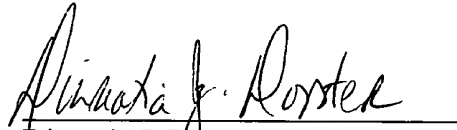
CONCLUSION

As discussed above, the specification clearly describes the invention in such a way as to enable one skilled in the relevant art to make and use the invention. Since Chakraborty teaches away from the claimed invention, Chakraborty fails to render the claimed invention obvious. Furthermore, all cited references, Chakraborty, Hyman, and Brigida, fail to disclose several elements of the claimed invention. In addition, no claim of the present invention is an obvious variant of the copending application 09/155201 (WO 97/36405). Thus, Applicants submit that certain clear and important distinctions exist between the cited prior art and the claimed invention. Applicants submit that these distinctions are more than sufficient to render the claims of the invention unanticipated by and unobvious in view of the prior art. It is therefore requested that claims 1-19 be found allowable, and this application passed to issue.

Having addressed each of the foregoing rejections or objections, it is respectfully submitted that this application is now in condition for allowance. Notice to that effect is respectfully requested. Should the Examiner believe anything further is desirable in order to place this application in better condition for allowance, the Examiner is requested to contact the undersigned at the telephone number listed below.

In the event this paper is not being timely filed, Applicants respectfully petition for an appropriate Extension of Time. In the event there are any fees due with respect to the filing of this paper, please charge Counsel's Deposit Account 50-2222.

Respectfully submitted,


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Enclosure: Jerry D. Gibson, "The Communications Handbook", CRC Press, 1997, pp. 539, and 1227-1228.